cricket DRAW

Transfer Modes

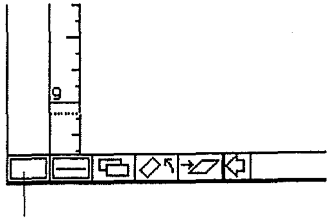
The transfer mode feature of Cricket Draw™ lets you easily create halftones on any PostScript® output device. Used for an object filled with a fountain, transfer modes produce very smooth gray shading; with solid gray objects, transfer modes create a more even fill.

Since this feature was not addressed in the Cricket Draw User's Manual, we'll explain transfer modes here, and show you some of the effects that you can achieve on a PostScript device.

Using Transfer Modes

You can apply a transfer mode to any object filled with a fountain or a solid fill whose intensity is greater than 0% and less than 100%. (To set fill intensity, double-click the object; in the dialog box that appears, type a percent value for the intensity of the fill.) You can also use transfer modes for text by setting the font intensity to a value other than 0% or 100%.

To apply a transfer mode, select one or more objects, then hold down the Option key as you click the Default Fill Control at the bottom of the Cricket Draw window. The Transfer Mode dialog box appears.


Hold down Option key and click Default Fill Control

Note: The transfer modes use commands in the PostScript page description language, which means that they can only be printed on PostScript devices such as the Apple® LaserWriter®. For the same reason, transfer modes are not represented on your computer screen, and do not print on an ImageWriter® or any other non-PostScript printer.

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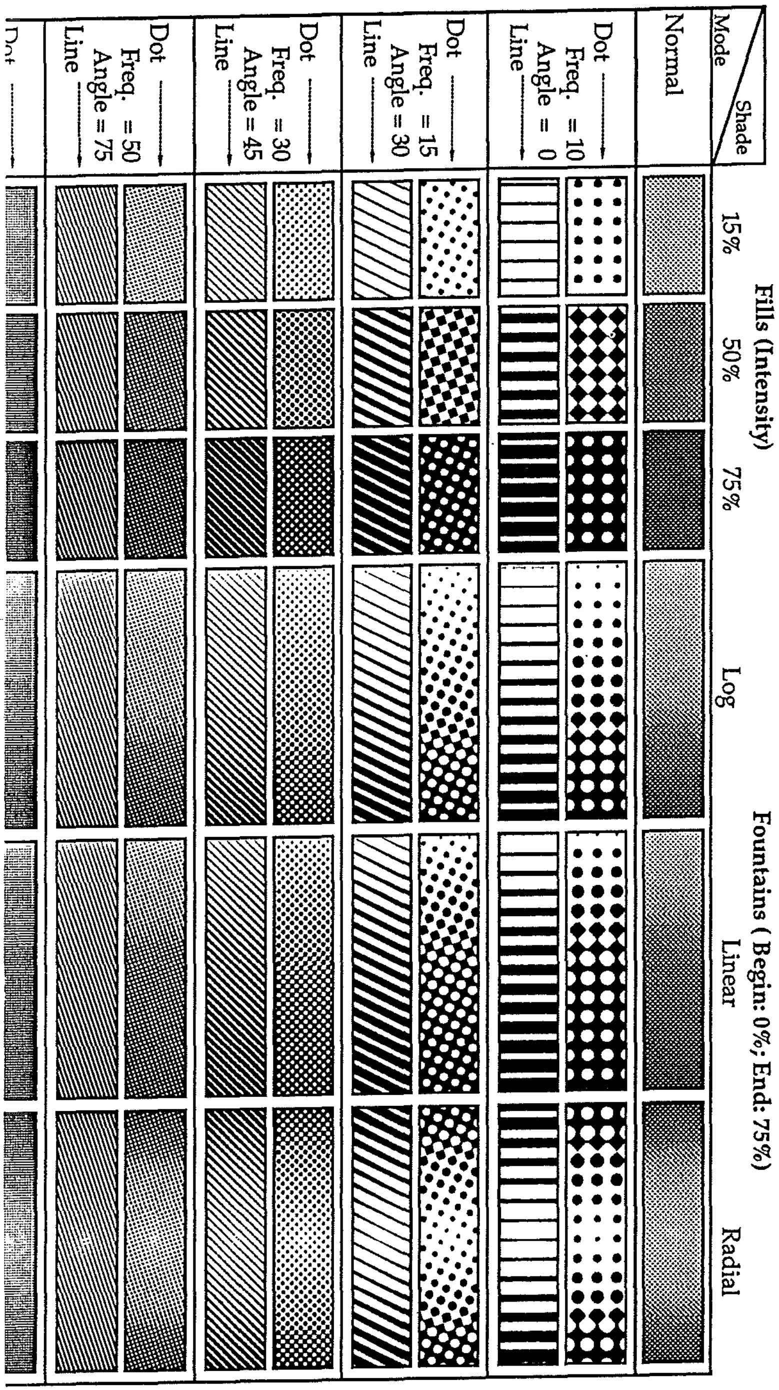
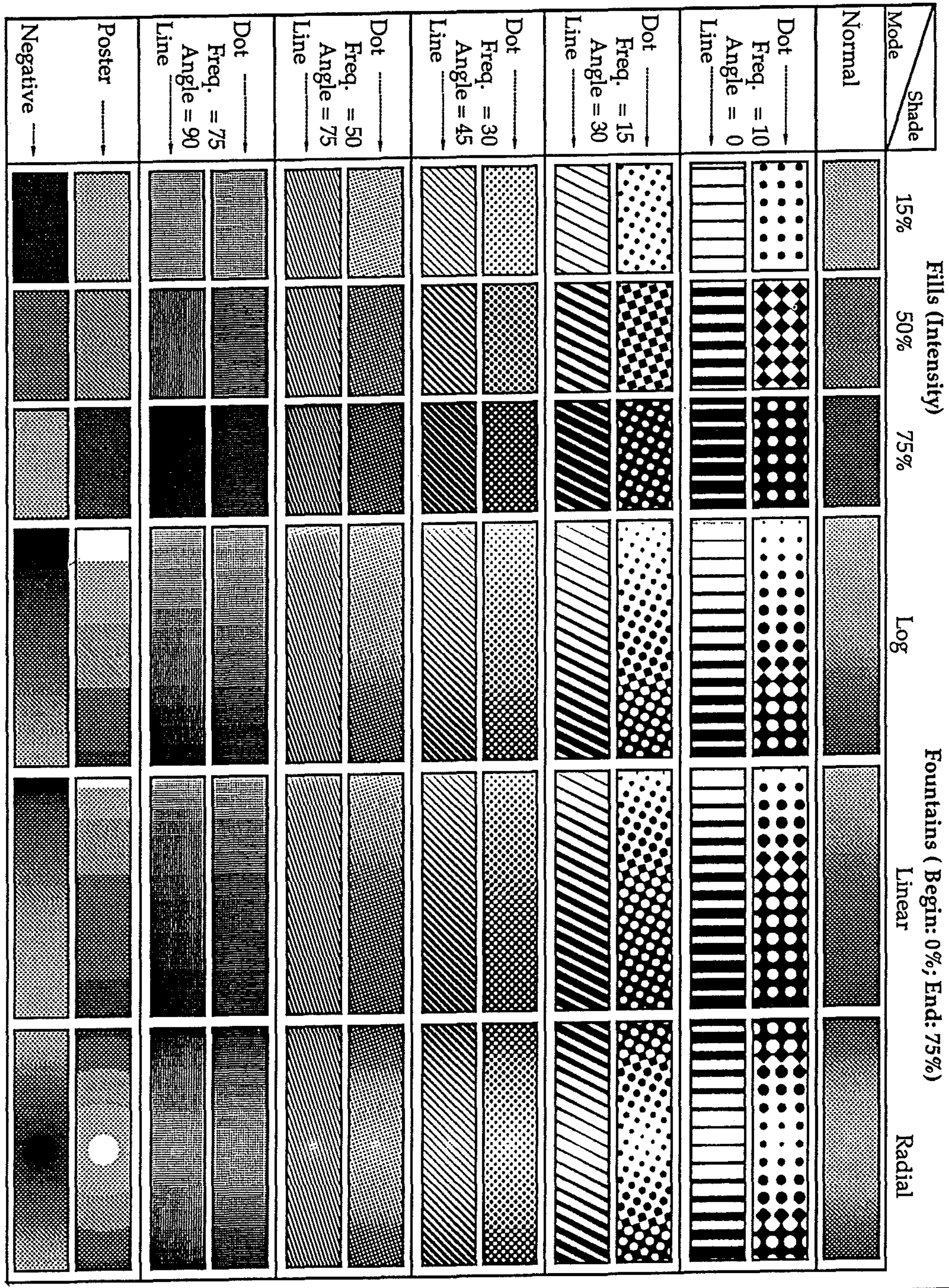
DR TM 11/88

Mode Reference Chart



Supplement

LaserWriter Transfer Mode Reference Chart



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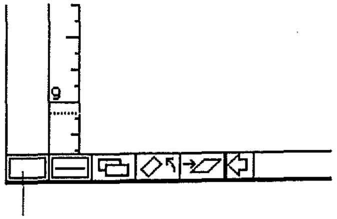

Hold down Option key and click Default Fill Control

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Dot & Line Modes

The Dot and Line transfer modes fill an object with a series of dots or parallel lines.

The size of the dots or lines is determined by the darkness of the gray used to fill the object: a 15% gray fill produces smaller dots and narrower lines than a darker gray.

When you select the Dot or Line transfer mode, the dialog box displays two extra options: Frequency and Angle.

Frequency

The Frequency option in the dialog box refers to the density of the halftone. The lower limit of the frequency is nine.

You can use the transfer mode frequency to calculate the number of gray shades possible in a single halftone cell. Divide the resolution of the output device by the transfer mode frequency. Then add 1 to the square of the result to find out how many shades of gray (including black and white) can be specified.

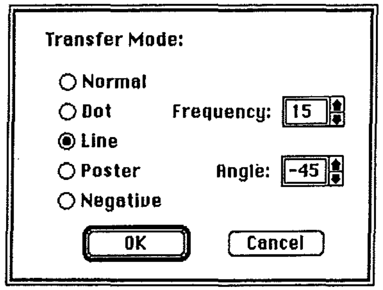
$$\text{shades of gray} = \left(\frac{\text{resolution}}{\text{frequency}}\right)^2 + 1$$

For example, if you create a halftone with a frequency of 50, it will be output on a LaserWriter as a halftone containing up to 37 gray shades. We made this calculation by dividing 300 (the resolution of the LaserWriter) by 50, to get 6; then we squared 6, to get 36, and added 1, for a total of 37 shades of gray.

Angle

The Angle option lets you slant the lines or rows of dots as they are printed.

You can set the transfer mode angle to any value from 0 to 360 degrees. Cricket Draw determines angles using the QuickDraw coordinate system—where 90° is at 6:00—rather than Cartesian coordinates—where 90° is at 12:00. If you're used to specifying angles as Cartesian coordinates, you can achieve the same result by inserting a negative sign before the angle that you specify in the dialog box.

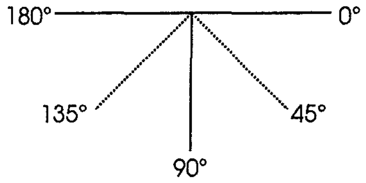

Transfer Mode:
○ Normal
○ Dot Frequency: 15
● Line
○ Poster Angle: -45
○ Negative

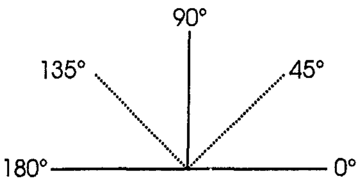
Poster & Negative Modes

The Poster and Negative modes are associated with object intensity only. When you select one of these modes in the dialog box, Frequency and Angle options do not appear.

The Poster mode maps the gray values to the nearest of four gray values (plus black and white). Think of it as objects being forced to choose the closest gray fill to 0%, 20%, 40%, 60%, 80%, or 100%.

The Negative mode inverts the image you're printing. For example, black becomes white, and a 75% gray shade is printed as 25% gray.


QuickDraw coordinate system

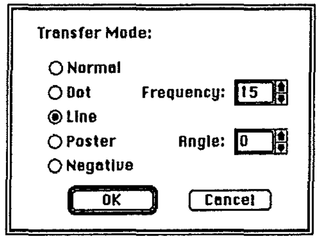

Cartesian coordinate system

The transfer mode samples on this page illustrate some of the different effects you can achieve in your Cricket Draw files. The chart on page 4 is a reference to the transfer modes applied to different gray shades and fountains printed on a LaserWriter.

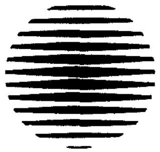
Note: We used a Varityper® VT600 printer, with a resolution of 600 dots per inch, to output the examples on this page. If you duplicate our examples on a LaserWriter or another PostScript device, your output will look slightly different.

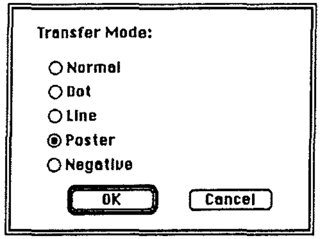
Transfer Mode Hints

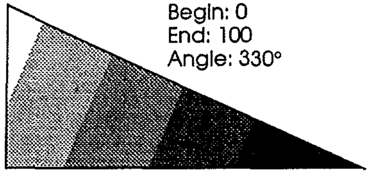
- To minimize banding in fountains, use a lower transfer mode frequency. As a general rule, the larger the object, the more you'll need to decrease the frequency.
- Increase the frequency of transfer modes used for solid filled objects to produce a more smooth, continuous tone. This technique is especially helpful when you want to place text inside a gray filled area, since the smoother halftone gray of the background doesn't interfere with the edges of the letters.

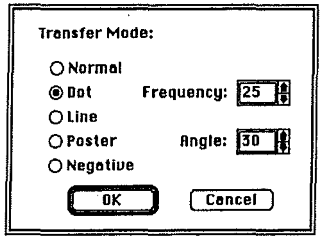

Transfer Mode:
○ Normal
○ Dot Frequency: 15
● Line
○ Poster Angle: 0
○ Negative

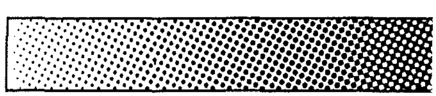
Radial fountain
Begin: 100
End: 0




Transfer Mode:
○ Normal
○ Dot
○ Line
● Poster
○ Negative


Linear fountain
Begin: 0
End: 100
Angle: 330°


Transfer Mode:
○ Normal
● Dot Frequency: 25
○ Line
○ Poster Angle: 30
○ Negative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Begin: 0
End: 100
Angle: 0

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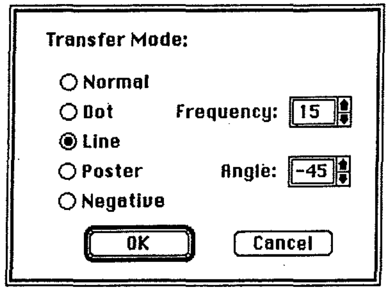

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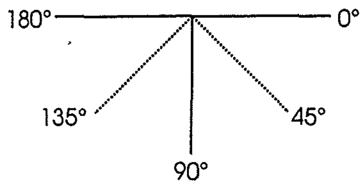
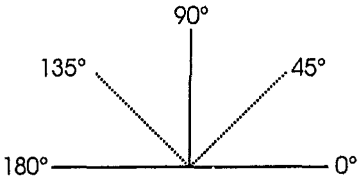
QuickDraw coordinate system



Cartesian coordinate system



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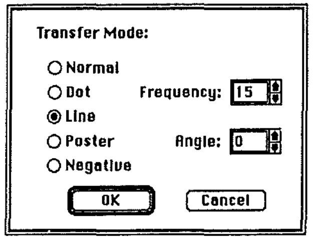
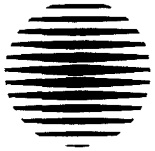
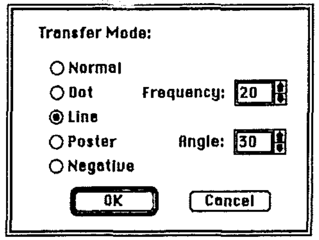


Transfer Mode:

○ Normal
○ Dot Frequency: 15
● Line
○ Poster Angle: 0
○ Negative

Radial fountain
Begin: 100
End: 0

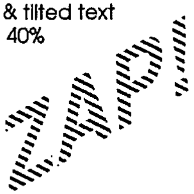


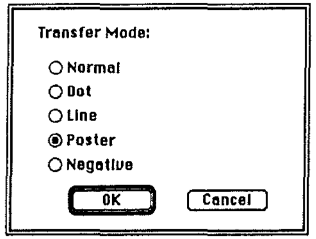


Transfer Mode:

○ Normal
○ Dot Frequency: 20
● Line
○ Poster Angle: 30
○ Negative

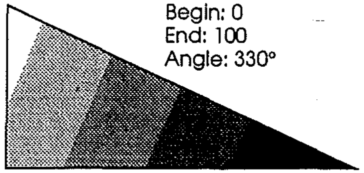
Rotated & tilted text
Intensity: 40%



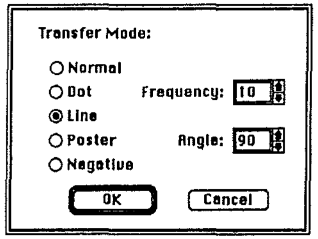


Transfer Mode:

○ Normal
○ Dot
○ Line
● Poster
○ Negative

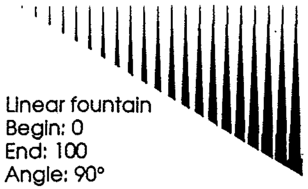


Linear fountain
Begin: 0
End: 100
Angle: 330°

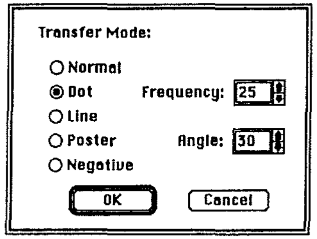


Transfer Mode:

○ Normal
○ Dot Frequency: 10
● Line
○ Poster Angle: 90
○ Negative



Linear fountain
Begin: 0
End: 100
Angle: 90°



Transfer Mode:

○ Normal
● Dot Frequency: 25
○ Line
○ Poster Angle: 30
○ Negative

Linear fountain
Begin: 0
End: 100
Angle: 0°